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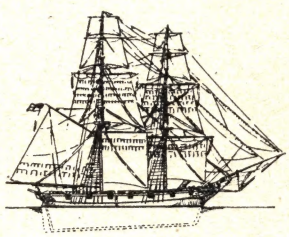

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Model Ships and Power Boats

INCORPORATING *Ships and Ship Models*

EDITED BY EDWARD BOWNESS

VOL IV NO 43 JULY 1951

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The Ship's Log

OUR COVER PICTURE

Visitors to the South Bank Exhibition of the Festival of Britain will have noticed the Thames barge *Sara* dressed with flags, which lies just off the esplanade along the river bank. She is a notable example of her type. She has been painted and done up for the Exhibition and all her gear is in first class condition. She was built in 1902 and during the long series of races for spritsail barges held in both the Thames and the Medway during her career she has won at least twelve firsts, four seconds and and one third, thus distinguishing her as one of the fastest of her kind. The full story of her career and of her kind will be found in the book by Edgar J. March, "Spritsail Barges of the Thames & Medway" which we published two or three years ago.

The small boat lying alongside is also a notable craft. She is the *Nova Espero* and the photograph was taken on the same day as that on which she sailed for America to the accompaniment of cheering crowds. The *Nova Espero* is the outcome of the life-long ambition of the brothers Stanley and Colin Smith to build a boat of their own and sail her across the Atlantic. Owing to difficulties about the timber supply they sailed to America in the *Aquitania*, designing their boat on the way over, and built her in Halifax, Nova Scotia, in the cellar of an old chapel in 1949. She is only 18 ft. long and 16 ft. on the waterline. From Halifax they sailed her to Dartmouth, Nova Scotia, and for the Atlantic crossing lashed their dinghy over the cockpit to provide shelter. After provisioning they sailed her from Dartmouth, Nova Scotia, to Dartmouth, Devon, in 43 days. As may be imagined they had an exciting crossing and on one occasion one of the brothers was washed overboard, but luckily he was washed back again. Colin Smith has been unable to return with the ship so his place has been taken by Charles Violet, who with Stanley Smith is now making the return passage. Our representative who went aboard her before she sailed tells us she is very strongly built, having $3\frac{1}{2}$ in. $\times$ 4 in. frames of grown oak between her steamed timbers. She has also had a cabin built on her during her stay in England. She has three water-tight bulkheads and thus is practically unsinkable.

THE "M.E." EXHIBITION

We would remind our readers that the latest date for receiving entry forms is July 16th. A large number of entries have been received and we feel sure that the ship models will once again be the feature of the show. A new cup for the best model of a training ship pre 1820 or an oriental sailing craft of any period has been presented by Sir Frederick Maze, K.C.M.G., K.B.E., who was at one time Inspector General of Chinese Maritime Customs and Administrator of the Chinese Lighthouse Department.

For the best exhibit in the hydroplane and speed-boat section Mrs. Willis has kindly donated "The Willis Cup" in memory of her husband who never missed an "M.E." Exhibition and was one of the most active model engineers in Ireland.

Both these cups will be competed for annually. The other awards, including the "M.E." Ship Model Societies Challenge Trophy (the Steering Wheel) remain as in previous years.

MODEL MARINE POWER PLANTS

by Edgar T. Westbury

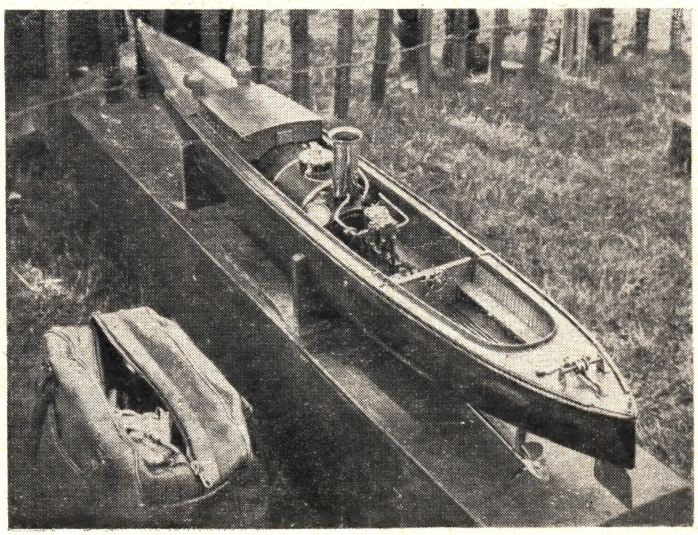
A FEW months ago—in the April issue of MODEL SHIPS AND POWER BOATS, to be precise, I gave some advice to beginners on the subject of suitable prototypes for modelling. Since then this matter has been further discussed, both at the pond side and at several club meetings and lectures. Among those who have had a good deal of experience with model power boat construction and running, my expressed opinion, that the smaller prototypes are most suitable for reproduction as working models, is generally supported. There are, of course, many exceptions to this rule, and some fine models of really big ships are to be seen at most model power boat regattas; but the majority of the old hands who regard the running of their boats in steering and nomination events as more important than their "showcase" appearance, are inclined to fight shy of anything larger than a cabin cruiser, tug, or pilot boat.

In a very interesting recent discussion on this subject, one exponent put forward some very strong claims for the very smallest of small fry, namely, the steam pinnace, as a subject for modelling. From observation of the relatively small number of models of this type which I have seen in action, I think there is much to be said in their favour. For the benefit of these readers who may not be familiar with this type of craft, it may be explained that they were fairly popular up to thirty or forty years ago for all sorts of light work both in rivers and harbours, including duties such as ships' tenders and dispatch boats, and their use as private pleasure boats was by no means uncommon, but in all cases they have been almost entirely superseded by the more efficient but much less aesthetic motor boat. I believe, however, that a few small steam pinnaces are still to be seen on the lower reaches of the Thames, where they are run by a band of keen enthusiasts, at least one of whom is well known in model engineering circles.

The earlier steam pinnaces were usually open boats, having the boiler and engine visible, the latter often being of very dainty design, with plenty of polished brass, and mahogany lagging—to the lover of engines, a joy indeed to behold. In the later development of the pinnace, however, the logical policy demanded enclosure of the engine room for protection against weather, as in the case of the naval picket boat, or her highbrow sister, the Admiral's barge. But though the engines of these boats were not open to inspection, I can testify from experience that they were no less beautiful examples of craftsmanship (in many cases the motion work of the engine itself was totally enclosed) nor were they less conscientiously cleaned up and polished.

One of the best known, and certainly one of the finest and most efficient of the model pinnaces in this country, is the *Gadfly*, which was built several years ago by the late Mr. D. Picknell, of Birmingham, and is still run regularly by his son, in the Bournville M.Y. and P.B.C. This, as will be seen from the photograph, is of the open type and the design of the power plant and fittings, including the polished brass funnel, is true to type. A sister boat, the *Mayfly*, also built by Mr. Picknell, is to the best of my recollection almost as fine a piece of craftsmanship, but is less commonly seen nowadays. Incidentally, I may observe that in modelling an open

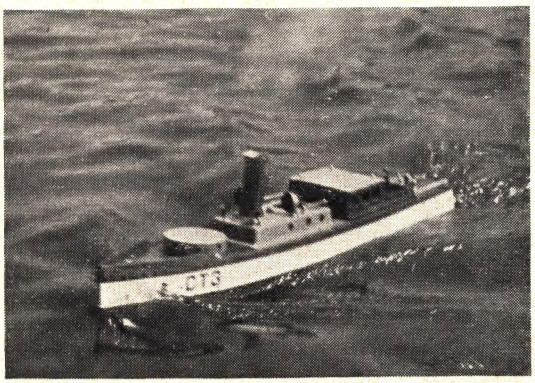
*Continued from June issue, page 64.



The model steam pinnace "Gadfly," built by the late Mr. D. Picknell, and still operating regularly at regattas in the hands of Mr. M. D. Picknell.

boat in which everything shows, the constructor must, in the interests of realism, take just as much care in the design and appearance of the engine as in the hull and fittings; a very different state of affairs to that which exists in cases where the plant is totally enclosed, where the policy adopted is, all too often, " what the eye doesn't see— . . . ! "

A very good example of the naval picket boat model is that built by Mr. Burgess, of the Cheltenham club, which is also a veteran, and a fairly



Mr. Burgess's model naval picket boat under way

regular performer at regattas in the Midlands and West of England. Another fine boat of this type was built by Mr. Hughes, of the Guildford club, and was seen at many pre-war regattas, though, I cannot recollect having encountered it since the war. I believe that some of the northern clubs have also produced excellent examples of these boats, though I have not actually seen them.

In the discussion I referred to above, some comments were made on the subject of modelling some of the more uncommon prototypes, and as one who is always keen on models which are " out of the rut " I heartily commend the idea that these should be given more attention. There are, of course, a few examples of boats that are " different "—such as the two fine model steam drifters by Mr. Maclellan, of the West London club, or the motor lifeboat by Mr. Hill, of the Bedford club. I have recently been asked for information on other less familiar prototypes, including the American stern-wheelers, which I agree would make excellent and very efficient models, though up to the present I have not been able to unearth a great deal of authentic information about them. If any reader can assist me to obtain drawings or other exact details of these craft, I shall be greatly obliged.

" EXCEPTIONS "

Under the heading of " exceptions to the rule " that small ships are most suitable for modelling, as mentioned in the first paragraph of this article, I may mention that there are certain types of large vessels which do not call for highly intricate detail work in the hull and superstructure fittings, and these have definite advantages from the model aspect, not only in respect of the amount of delicate work involved, but also in robustness to withstand the use and abuse they encounter on the pond, and in reducing the effects of windage. Generally speaking, cargo boats and tankers are better than passenger liners in this respect though some kinds of cargo boats have derricks or other forms of gear for handling heavy freights, which rather complicate matters. The *Penang* type of craft, which has been fully described in *The Model Engineer*, and more briefly referred to in MODEL SHIPS AND POWER BOATS, is popular among those who prefer to make fairly large models of fairly large ships.

Some time ago I mentioned the model cargo liner built by Mr. Morris, of the Bournville club, and I make no apology for publishing a further photograph of this boat, because it is not only a very fine model, and a good example of the type referred to above, but it also enables me to illustrate the use of a self-winding cable starter, such as was referred to in the March issue. As previously mentioned, this boat is fitted with an " 1831 " type 30 c.c. water-cooled twin o.h.v. engine, and the starter gear is of the "detached" type (i.e., quite separate from the engine itself, and therefore applicable to practically any engine). Though not quite the same in detail as the " 1831 " starter, it engages with a dog on the engine shaft, in the same way. The advantages of such a starter over the common method *à la diabolo* (which often lives up to this title in a very literal way !) require no comment.

RELIABILITY

On several occasions in the past I have referred to the fact that although efficiency in model boats, and racing craft in particular, is making rapid and sometimes spectacular progress, there is little sign of any proportionate improvement in reliability —on the contrary, many events have shown indications of retrogression. This is very much to be deplored, not only on account of the impression it makes on the general public whom we hope to interest in our models, but also because it mars the pleasure which those who run these boats are quite rightly entitled to expect. Reliability and consistent performance are very largely dependent on careful workmanship in every detail of the power plant, and meticulous attention to maintenance after it has been built and installed.

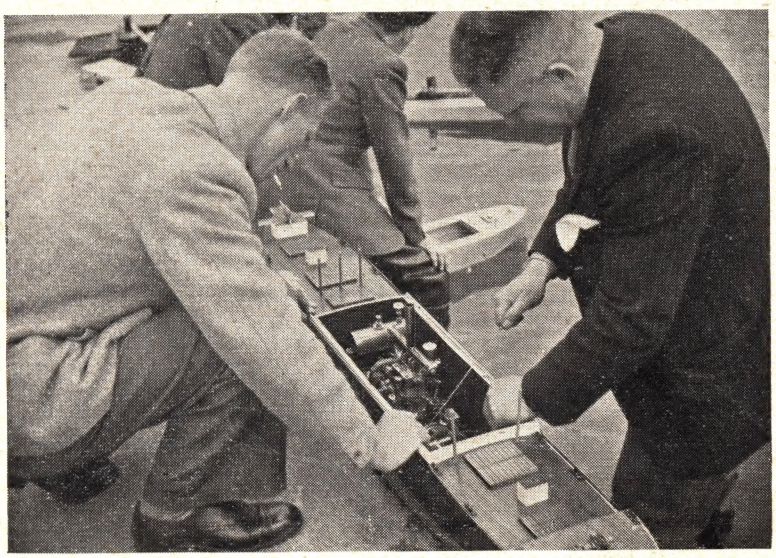
It is generally conceded that steam driven boats are more reliable than those driven by i.c. engines, but this is not an inevitable conclusion, and it can be stated that there is no such thing as inherent unreliability. Any form of mechanism which is designed on sound principles, accurately built with suitable materials, and correctly adjusted, will perform its function unfailingly every time. This, of course, is a counsel of perfection, and it may happen that our best efforts fall a long way short of this ideal, but if it is pursued diligently enough, success is bound to follow. The reasons why i.c. engines are usually more liable to erratic behaviour is simply that they demand higher standards of work-

manship in their construction, and more skill in their adjustment, than steam engines; but with either type of engine, it will be found that their most successful exponents are those to whom nothing is too much trouble, and no job of work is dismissed as " near enough."

It is, of course, only natural that in racing boats, where engines have to be keyed up to the utmost pitch of efficiency, there should be a greater tendency to mechanical breakdown and other troubles than in cruising boats, which impose only a modest demand on engine power; but for that very reason, there is all the less excuse for the slipshod work which one often sees in the engines of boats which are optimistically expected by the constructor to break all records. Some philosopher once said that " temperamental " people were 50 per cent. temper and 50 per cent. mental; and though I cannot apply an equally neat pun to " temperamental " engines, I would suggest that their characteristics may be described as equal parts of bad workmanship and bad handling.

I have always exhorted builders of engines to concentrate on making them reliable before trying to tune them up for high speed; but on the whole this advice has fallen on deaf ears, and the fallacy of trying to run before the ability to walk has been attained is very prevalent. Others besides myself have suggested that in racing events, points should be awarded for reliability in addition to speed, but the complication entailed in assessing results makes this idea unpopular among club organisers, and apart from one or two special competitions, everything goes to the boat which, by hook or by crook, succeeds in putting up the highest speed.

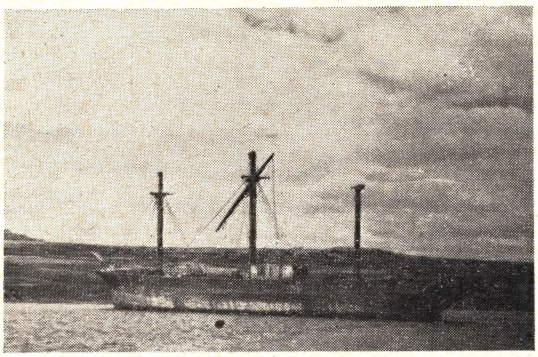
This matter was the subject of a discussion which I had recently with Sir Robert Bird, who, as readers may know, is a very keen model power boat enthusiast, and has not only given his moral support to our cause, but has also carried out a good deal of practical work on the development of model speed craft, though of a rather different type to those employed for round-the-pole racing. In the course of his experiments, Sir Robert has tried out nearly all known makes of commercial miniature engines, but while he is full of admiration for the performance which they attain, he has not found one which is sufficiently reliable to ensure that what they do today they will do tomorrow. He agrees with me that high speed is not the only thing that matters in model racing events, and that competitions would be much more satisfactory if competitors were less keen on " beating the clock " than on putting up a clean and reliable performance.



Mr. Morris starting the engine of his model cargo liner with the self-winding cable starter described in the March issue.

Nothing is more frustrating than to see boats which *might* put up an amazing performance—if they only ran, or even started—but in practice exhibit a temperamentality more typical of a Hollywood star than a well-behaved boat. It would be much more satisfying to see a race of slower and well-matched boats, all of which could be relied upon to start, and to run at something approaching their best speed. Perhaps one cannot, in view of the limitations of human nature, expect that the devotees of speed would immediately and wholeheartedly accept such an idea; but if one thinks it over calmly, it is evident that this would simplify many vexed questions, including that of efficient silencing of engines, and also the ever-increasing strain imposed on timing devices, tethering lines and safety measures, which are a continual nightmare to those harassed officials on whom devolves most of the work involved in organising events, and none of the glory of speed achievements.

To be continued



The " Great Britain " in her last berth

The " *GREAT BRITAIN* "

— In Memoriam —

by Dr. J. R. F. Joyce

FESTIVAL OF BRITAIN, 1951, calls to mind that Brunel the great engineer as chairman of the committee dealing with the engineering section displayed a lively interest in the 1851 exhibition. Although better known through " the battle of the gauges " caused by his plans for the Great Western Railway, he was also a bold experimenter in the field of ship construction. It is perhaps apposite in this Festival year to pay tribute to his genius by drawing attention to one of his ships, the *Great Britain*, which though a wreck is still above water.

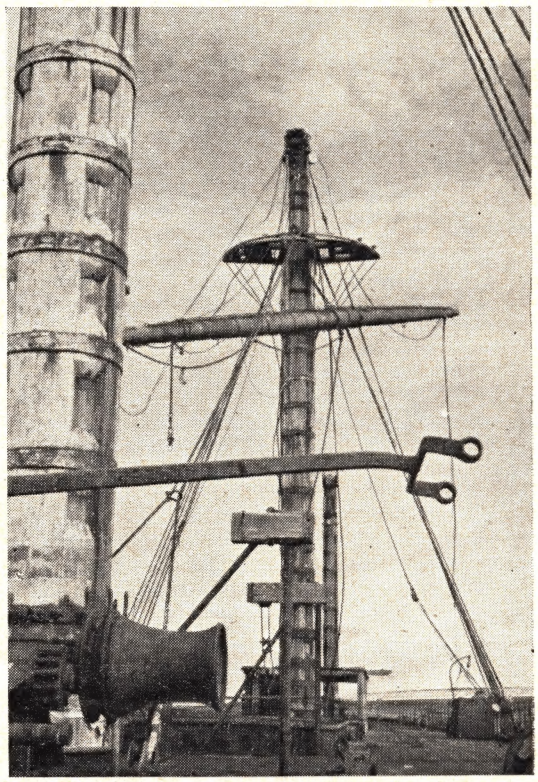
This ship, built in a dry-dock at Bristol in 1839, was by the standards of the time a leviathan, although she was not so large as the ill-fated *Great Eastern*. The dimensions were 322 ft. by 51 ft. with a depth of hold of 32 ft. 6 in., and the tonnage is given as 3,448. In his original design Brunel intended to fit paddles, but, impressed by the newly invented screw propeller, he immediately ordered a conversion to this means of propulsion. The single screw, powered by a four-cylinder engine developing 2,000 h.p. under a boiler pressure of 5 lb. per sq. in., gave a speed of 12 knots on the trials. The travelling public had little faith in engines so six masts, on which a considerable sail area could be carried, were stepped.

The *Great Britain* was unique as the first screw-driven iron liner, but she was neither the first iron ship nor the first screw-driven steamer. At the time of her building, the merits of wood versus iron for the hulls of ships were being hotly debated. The Admiralty in particular defended the " wooden walls of England," while ship owners were doubtful of the ability of iron hulls to withstand contact with the bottom. In 1846 the *Great Britain* had the misfortune to go aground off the coast of Ireland where she survived a very stormy winter before she was refloated. Her condition after this severe test virtually ended the argument of iron versus wood.

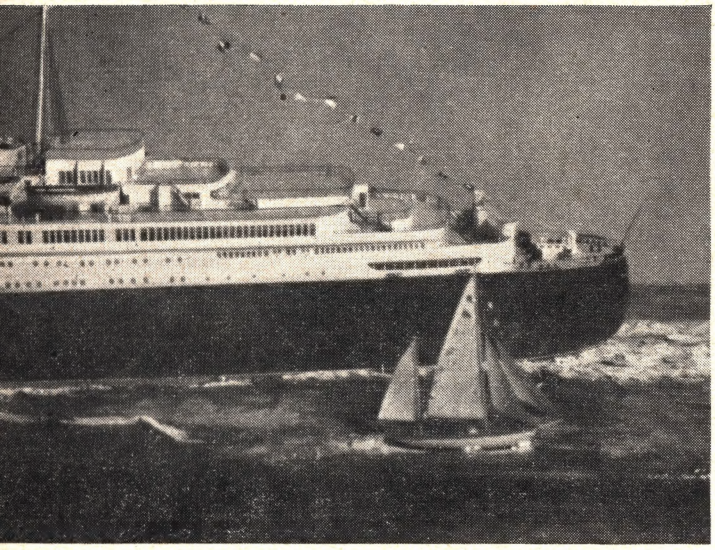
As a passenger ship she appears to have had little success for she was converted into a cargo ship after his salvage. As a steamer too her life was short, for the engines were removed and she reverted to sail and apparently tramped the world. Designed as a steamer her lines did not fit her for fast trade so she never attained the glory of the clippers. As competition from steam to sail increased she eventually sank into the Chilean phosphate trade, until over 50 years ago she staggered to the Falkland Islands disabled and dismasted. The " Roaring Forties " give sailing ships in distress off the Horn little option but to seek haven in dreary wind-swept Port Stanley. Many wrecks moulder in the harbour there, but some earn a few more dividends as hulks for the storage of wool and coal.

This was the fate of the *Great Britain*, and for many years she lay anchored opposite Stanley Cathedral

Continued on page 89



Deck view looking aft showing built masts and lever for up-and-down windlass



The stern of the "Queen Elizabeth" model

*MINIATURE LINERS

by

DONALD McNARRY

AS far as I could learn from my photographs and a dockside view of the ship herself, all the deck-stairs seemed to be made entirely of wood, or at least they were all painted brown, no white rails or stanchions being evident. I therefore decided to make the stair-rails on a circular frame, Fig. 13, using Pearsall's silk and much the same method described for the deck-rails.

Everything had to be marked out first on the circular frame in order to get the angle correct. Notches were then cut all the way round the circle and not without some trouble the silk was wound on and treated with french polish. Owing to the frame being the same thickness all the way round some of the crossings of silk did not touch and consequently did not stick when french polished ; however, the majority were O.K. and I now have enough banister rails for my next two liner models, at least.

The shrouds for both models were made on a frame in the same way as described for the rails (see Fig. 14), the angle of the shrouds being different on each mast on both models, they had to be marked out very carefully on the frame. The shrouds themselves were made of fine black enamelled copper wire (about 50 gauge, I believe) and the ratlines were made from Pearsall's fly-tying silk that had been previously unravelled to a third of its thickness. It is advisable to run this unravelled silk through a rag soaked in french polish to lay the fluff. Care should be taken when painting the wire and silk on the frame not to use too much french polish or the shrouds will look heavy. A thin razor blade broken to a point was used to cut out the un-ratlined spaces between the two aftermost or foremost shrouds on each set.

BOATS

There are 15 double-ended and one transom-sterned lifeboats on the *Stirling Castle* and 26 double-ended lifeboats on the *Queen Elizabeth*. I carved all of these from two or three long strips of holly; the insides were hollowed out with small home-made chisels and the outsides were shaped up as much as possible before cutting off the strip. This seemed an almost endless job, but one gets quicker as one goes

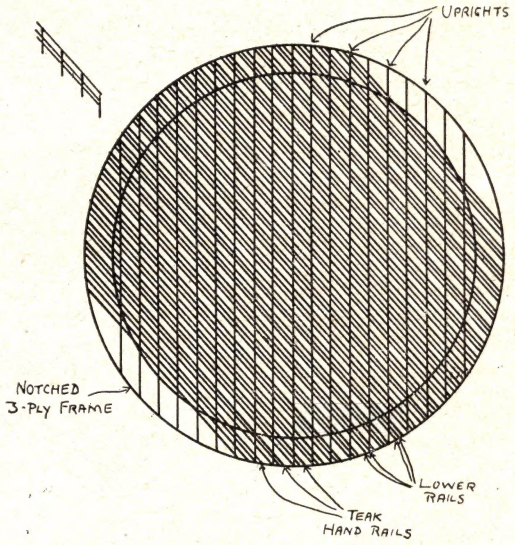


Fig. 13.

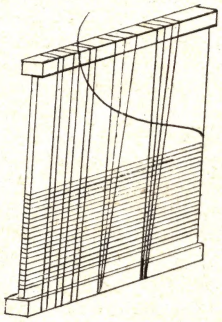


Fig. 14.

*Continued from June issue, page 67.

on. The first lifeboat I did for the *Queen Elizabeth* took me over an hour to carve, the twenty-sixth, 20 minutes.

I was able to make a much better job of the *Queen Elizabeth's* lifeboats as I had much more detail of their internal arrangement. The inside equipment included in each lifeboat on the model were

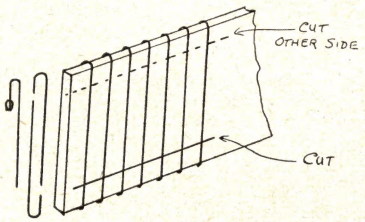


Fig. 15.

thwarts, made of paper, an engine and buoyancy tank each made of holly, masts with a furled sail, of wire and thick white paint to represent the sail, six oars of wire, strong back (without furled cover) of wire.

External equipment consisted of stem, keel, stern post and stability fins all of white-painted silk thread, rudder of paper, and top brown rubbing strake of brown-painted paper. As an added refinement on the *Queen Elizabeth's* boats I made the life line loops hanging down from the gunwales of each side of each boat ; these were made by winding thin black copper wire round an oval wooden former, the resulting wire ovals being cut in half leaving two U-shaped pieces of wire which were then attached to the outside of the boat with white lac varnish.

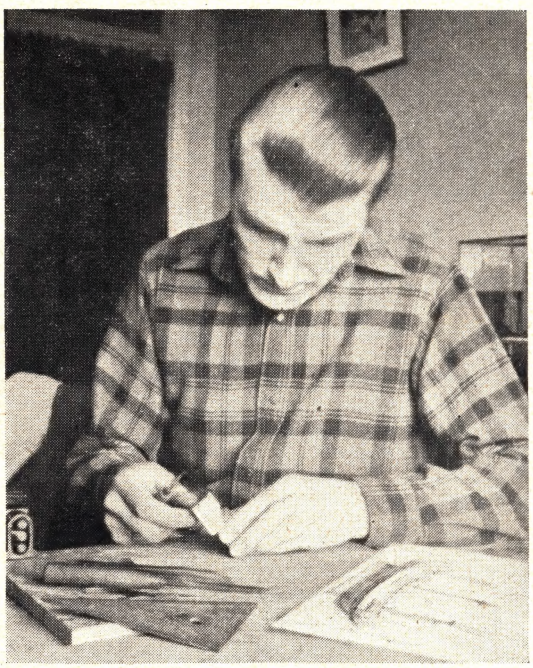
There were eighteen half loops to each side of each boat. Altogether I think there are eighty separate pieces to each of the *Queen Elizabeth's* boats. It would have been much quicker to have made all the boats covered but the improved appearance of the open lifeboats is well worth the extra time and trouble involved. It took me about three weeks to complete all twenty-six.

The first two lifeboats on the *Queen Elizabeth* are the accident boats and are smaller than the rest, the aftermost two are the wireless boats and are fitted with a little cabin just forward of the engine. The transom-sterned boat on the *Stirling Castle* is the motor boat and is number six on the starboard side.

LIGHTS, ETC.

Some of the smallest fittings I included on both models were the various lamps ; there were eight flood lights, four to each funnel, and two, presumably docking lights, on brackets, on the after side of the bridge wings on the *Queen Elizabeth* ; all of these were made with blobs of gum arabic on wire, painted white and a small porthole ring fitted on to resemble the rim of the lens.

The two morse lamps on the roof of the bridge wing cabs on the *Stirling Castle*, the stern lights, mastlights and navigation lights on both vessels were made from minute pieces of paper and little



The author at work

blobs of gum arabic to represent the glass. Double lights were shown in each case.

There is only one morse lamp on the *Queen Elizabeth* and that is at the top of a mast on the port side of the wheel-house roof. The riding lights, running on halliards fixed to one of the foremast stays were made in the same way. There were dozens of the usual type of standard deck lights on both vessels. The standards of these were made by winding some fine fuse wire round a piece of card, Fig. 15, and cutting on opposite sides immediately beneath each turn. After fitting and painting white the usual spot of gum arabic was added.

RIGGING AND FLAGS

All the standing rigging and aerials in both models were made from various gauges of fine copper wire, the running rigging and derrick rigging from my wife's hair, hers being darker than mine. Incidentally, if any kind reader can tell me how to get naturally wavy hair straight for this purpose I shall be much obliged.

The fore and aft stays and derrick rigging were fitted first on both masts, then the shrouds, previously made on a frame, next the preventer and back stays and then the aerials stretching between each mast and funnels. The running rigging was next fitted, consisting of flag, signal, riding light and jackstaff halliards.

The method of fitting the rigging, was to roll the wire on a piece of glass with a steel ruler to get it quite straight, cut off pieces of the correct length with a razor blade and cement into place with a spot of french polish or white lac varnish at each end.

The rigging blocks and aerial insulators were represented by small spots of paint.

With the kind help of Mr. A. A. Purves I was able to get some details of the flags flown on both vessels, those on the *Stirling Castle* were, South African flag, foremast head ; Royal Mail pennant, fore port yard arm ; Union Castle house flag, mainmast head; Red Ensign, peak of main gaff.

Also at Mr. Purves's suggestion I applied to the Marine Superintendent, Cunard White Star Ltd., Southampton, and received back an exact description of the flags flown by the *Queen Elizabeth* when she went down Southampton Water on the occasion of her peacetime maiden voyage on October 16th, 1946. They were as follows ; foremast head, Stars and Stripes ; fore port yardarm U.S.M. flag ; fore starboard yardarm, red and white pilot flag ; mainmast head, above Cunard White Star House flags ; peak of main gaff, Red Ensign. The dressing signal flags used on this occasion fly from halliards set up from foot of forward jack staff to foremast truck down to the bridge, and from the vent house abaft after funnel to mainmast truck and to docking bridge aft. I could not get exact details of the signal flags flown, but from some newspaper photographs I was able to get a pretty good idea. About sixty flags were shown on the model.

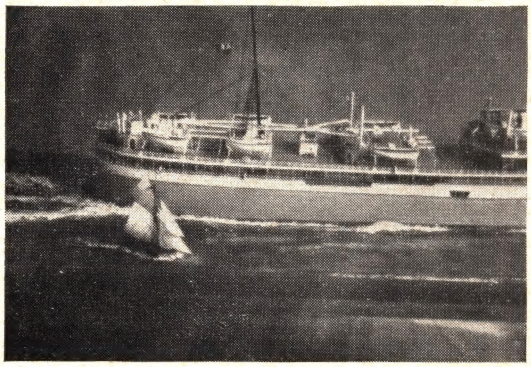
SEA

Although I now live by the sea and look at it every day, I am by no means a sailor and have very little idea of what the sea really looks like from the deck of a ship, so it is with some trepidation that I set out to carve seas for my waterline models. However by showing both the *Stirling Castle* and *Queen Elizabeth* as they might appear outward bound down Southampton Water, and by dint of much re-reading of pre-war articles by " Jason " and Edward Bowness on the subject, fair results have so far been obtained. Since I re-started model building after the war, I have always used American white wood for the seas. A place for the hull to fit in is first cut out and two wooden dowels set up to correspond with the holes previously bored in the underside of the hull. I usually mark out the bow wave, wake, etc., with rough pencil lines, and then complete the carving with one or two curved outside ground gouges, finishing off as smoothly as possible without using sandpaper. I have found that seas are fairly easy to carve if the right wood is used, such as white wood, sycamore, beech or holly ; generally speaking, as with most other things in ship modelling, I don't find the soft woods of much use.

Holes were drilled at each corner of the sea and square recesses cut out from the top to half way through the thickness of the wood, square nuts were tapped in and covered over again with small squares of wood.

These nuts will receive the bolts that will come up through the base board of the case. The seas were painted with artist's oil colours mixed with flat varnish and pure turps.

The models were then glued squarely and firmly into place and the bow waves, disturbed water around the hull and wake, were then modelled with plasticine and painted. Readers who look down their noses at the mention of plasticine, because they think it will crack or deteriorate with time, may perhaps be reassured to know that I have some waterline models set in complete seas of plasticine made some 13 to 14 years ago which show no sign of deterioration in any way, despite a lot of rough treatment and extreme temperatures during the war years.



The stern of " Stirling Castle " model

The whole sea, when completed, can be given two or more coats of Winsor & Newton's picture varnish. The water jets issuing from the sides of the hull were added at this stage, they were made of little pieces of wire painted white.

Partly to show up the size of both models and partly because I particularly enjoy making them, I included two small craft to the same scale in each case. With the *Stirling Castle* there is an Air Sea Rescue Launch on the port bow made from a Modelcraft plan, and a cutter on the starboard quarter, a modernised version of the plans on page 78-80, Vol. 1, *Ships and Ship Models*.

Apparently my seamanship went awry with the latter as I was asked by " Jason " to explain how it got there at all, the bulk of the liner apparently blanketing its sails ; being a mere land-lubber I can only put it down to Divine Providence.

A small ketch was made to go with the *Queen Elizabeth* from a drawing on page 70 of Underhill's *Sailing Ship Rigs and Rigging* ; I dressed this little ship with numeral code flags to contrast with the alphabet code flags used on the *Queen Elizabeth*. As the ship was supposed to be passing Calshot I made a little model of a Supermarine Walrus Flying boat from plans lent by Vickers-Armstrong and moored it to a buoy in the sea on the liner's starboard bow. This aircraft was made almost entirely from holly and although only about 1 in. square is complete with rigging, propeller, floats, etc.

CASES

Being a wood enthusiast and being intensely interested in all kinds of hard wood I have tried since the war to make all my cases of different kinds

of wood, the *Queen Elizabeth's* case being walnut and the *Stirling Castle's* English sycamore, both unstained but french polished.

I have long since come to the conclusion that case-making is an art in itself, and, dare I say it, an art in which few of the exhibitors at the " M.E." Exhibition are versed ; indeed the Science Museum itself is not free from this failing as I noticed when last there, that Dr. Longridge's beautiful model of H.M.S. *Victory* was mounted on a rough, unfinished plank of wood, stained red, completely out of harmony with the exquisite artistry that it supported. Obviously a grand case cannot make a good model out of a bad one, but a bad case can considerably detract from the appearance of a good model.

MATERIALS

To finish up with, perhaps, a few words on materials and methods might be of some use to those readers who are new to the game of shipmodelling. I expect many of the old hands will have had a good laugh at some of my ideas set out in the preceding lines and I am sure that they will have realised that I am no metal worker and never use metal when something else will do.

With regard to wood, soft woods are usually avoided. For one thing they require too much finishing and also cannot be carved with a clean enough outline. To my mind holly is one of the best woods for use in shipmodelling, it is hard, but with sharp tools it is a pleasure to work and with fine flour paper can be finished until it shines like ivory. Also I find that holly shavings of an even paper thickness, a foot long and as wide as the plane blade can be planed off with a little practice and can be used advantageously for such things as the *Queen Elizabeth's* funnels, previously mentioned. Sycamore, beech, American white wood and box (if you can get it) are also ideal woods. Obtaining good quality timber is very difficult these days ; most of my holly I cut myself some years ago, had it sawn into planks and seasoned it in the roof ; providing it is stacked up correctly it doesn't warp in the process. Beech and sycamore are both English woods, and can be bought under the poundsworth a month home grown timber scheme, but it will almost certainly be wet when bought and should be seasoned before use.

One year for every inch of thickness is, I believe, the usual time for seasoning. Cheap secondhand furniture, if obtainable, is usually made of American white wood, and box seems to be almost unobtainable except from old rulers and chisel handles.

Best quality Bristol board and paper are also necessary additions to one's stock. Cellophane for the windows can be obtained from several sources. I got mine from a paint manufacturer's book of shades, each colour was covered with a fairly thick sheet of cellophane which, with a little care, can be peeled off.

TOOLS

One of the best things about miniature ship building is that, literally, three quarters of the work can be done by the fireside with the minimum of tools. No cold workshops away from the easy chair and the wireless, no backache through bending over a bench, and no expensive and complicate tools, and very little, if any, mess. In a previous article I described my cabinet of drawers containing tools, paint, scrap wood, etc. I find it a time saving and tidy arrangement. The minimum of tools only are necessary, a chisel and gouge for carving the hull, razor blades, a knife and a surgeon's scapel, if you can get one, for carving out the odd bits and pieces ; a few small drills and dentist's burrs about complete the outfit.

With regard to actual construction I like to spend a month or so with the plans I am going to use, building the model in my mind, and making a list of the things to be done in the order in which they are to be done.

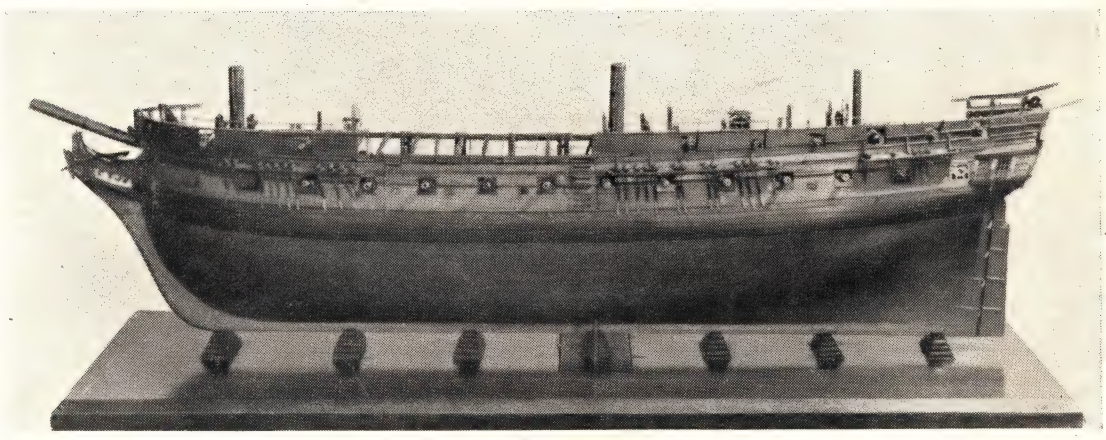
Obviously if one forgets to put in an item of deck equipment, say, on the lower decks of the *Stirling Castle*, it is going to be almost impossible to do so after the deck stanchions and rails are fitted.

My *Stirling Castle* took about six months and the *Queen Elizabeth* a year, both these times would have been less if I had had better initial results with the painting, but both models would have been much better if I had taken longer. In conclusion, if I can be of assistance in any way to miniaturist readers, a letter *via* the Editor will always find me.

The Great Britain *(Continued from page 85)*

until rust and decay placed her in danger of sinking. When tide and weather were favourable, she was towed without fuss through the Narrows across Port William to Sparrow Cove. Explosives were taken to scuttle her so that wind and tide would not break her loose from her moorings, but it was found that time had done its work only too well. All that was necessary was a few pick-blows through her plates, and she was thus denied even the salute of exploding dynamite. Within a tide or two her hold was full, and she settled down in shallow water.

Sea birds foul her plates, tides surge through the ever-widening holes in her bilge, and the westerly gales reverberate in her gutted interior, and the *Great Britain* rests, a mouldering tribute to the boldness of Brunel and the skill of the British shipwrights who fashioned her. The Falkland Islands are remote, but, now and then, a casual visitor like myself scrambles aboard, wanders over the broad expanse of deck, peers into the echoing hold, and wonders what manner of men formed her company, and what bewhiskered gentlemen and crinolined ladies took passage in her. She had been at work 12 years in 1851, but she was nevertheless one of the heralds of the century of progress commemorated by the Festival of Britain.



THE ARETHUSA—1781-1814

and the restoration of a model for the Bristol Museum

by Norman Poole

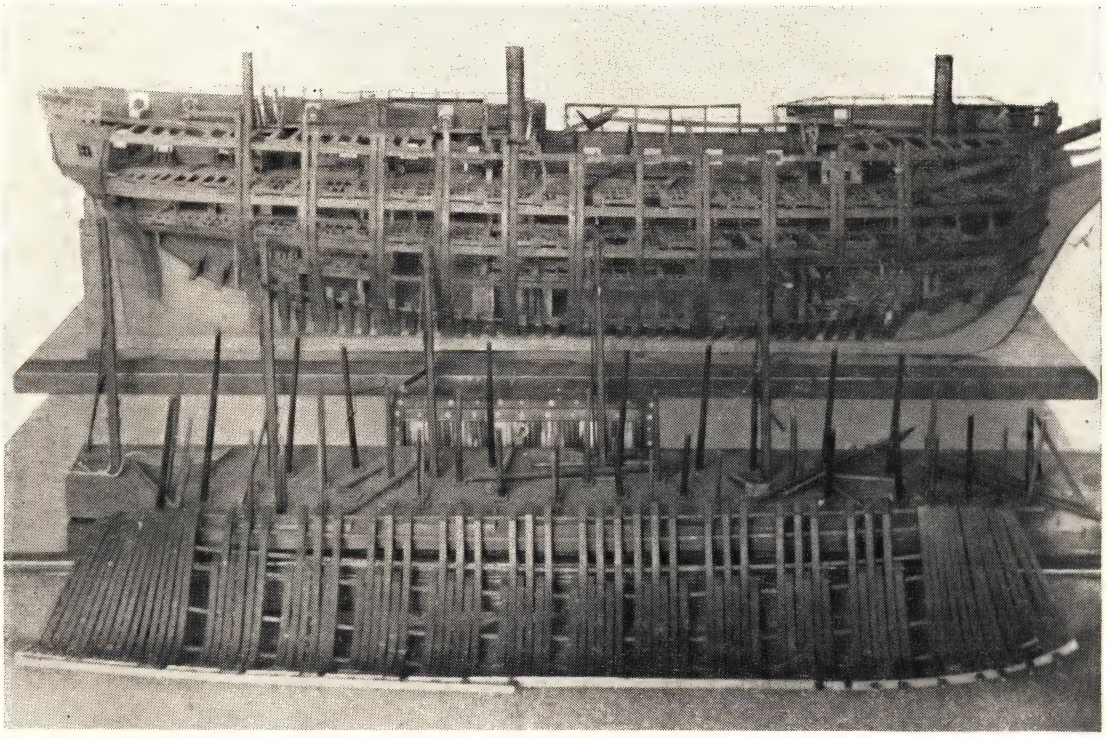
THE model of this frigate which is in the Bristol Museum is of unusual interest to model makers. It does not represent the *Saucy Arethusa* which, as the *Arethuse*, was captured from the French by the *Venus* off the coast of Brittany in 1759, but her successor. The prototype of this model was built in the shipyard of Messrs. Hillhouse, of Bristol, in 1781. She was a normal frigate of the period, of 948 tons, carrying 38 guns though pierced for 44, and a complement of 240 men. She was launched on April 10th, 1781, and her dimensions were 141 ft. 1 in. long, 39 ft. beam and 13 ft. 9 in. depth.

The ship had quite an eventful career, being in action many times until she was finally broken up in 1814. The following is an extract from the book by Commander J. W. Damer Powell, " Bristol Privateers and Ships of War."

" She was first commissioned by Capt. Sir Richard Pearson, formerly of *Serapis*, who had been knighted after his defeat and capture by John Paul Jones in the *Bonhomme Richard*. In December, 1781, she formed part of the fleet under Rear-Admiral Kempenfelt, which, off Ushant, attacked and dispersed a French Convoy under de Guichen. On April 23rd, 1793, the *Arethusa*, commanded by Capt. Sir Edward Pellew, afterwards Lord Exmouth, was one of a squadron of five frigates under Commodore Sir John Borlase Warren in the *Flora* which engaged and took three out of a squadron of four French frigates under Commodore Desgarceaux. Four months later, the boats of the *Arethusa* and *Flora* attacked the corvettes *Alerte* and *Espion* in Audierne Bay, driving them ashore and taking 52 prisoners. In 1795, the *Arethusa*, Capt. Mark Robinson, took part in the Quiberon expedition under Sir John Warren, and in 1797, when commanded by Capt. Thomas Wolley, she formed part of the squadron under Rear-Admiral Henry Harvey, which captured Trinidad and made an unsuccessful attack on Porto Rico. On August 23rd, 1806, the *Arethusa*, Capt. Charles Brisbane, in company with the *Anson*, 44, engaged the Spanish *Pomona*, 34, and 12 large gunboats, close to Moro Castle, Havana. After 35 minutes fighting, the *Pomona* struck, six of the gunboats were sunk, three blown up, and the other three driven ashore. At daylight on New Year's Day, 1807, the *Arethusa*, Capt. Brisbane, who was senior officer, with the *Latona*, *Anson* and *Fishguard*, entered the harbour of Curacoa. Captain Brisbane took his ship in until her jibboom projected over the town wall, and wrote a summons to surrender on the capstan. This was refused, and at 6.15 a.m. the British began the action. A frigate and corvette were taken, a fort was stormed the fire of another fort was silenced, and by noon, the whole island had submitted at a cost of three killed and 14 wounded. This, the most famous exploit of *Arethusa*, is still commemorated in the name of H.M.S. *Curacoa*."

The model, as one can see from the illustrations, is of the hull only, although originally there were several boards beautifully arranged with masts, spars, tackles, halliards, braces, etc., all laid-out and labelled. Unfortunately, these were all lost in the ankle deep debris of the museum, after an air raid. They were invaluable, but no photographs or records remain. On the port side, the planking, decking, guns, nettings, etc., are complete, but the starboard side is in partial frame only, showing the method of framing and the arrangement of deck beams, knees, keel, stem and sternposts. This also opens up the interior planning and fittings of the port side to advantage and is well worth close examination.

The model is beautifully made, mostly in boxwood and is obviously built from detailed plans and from



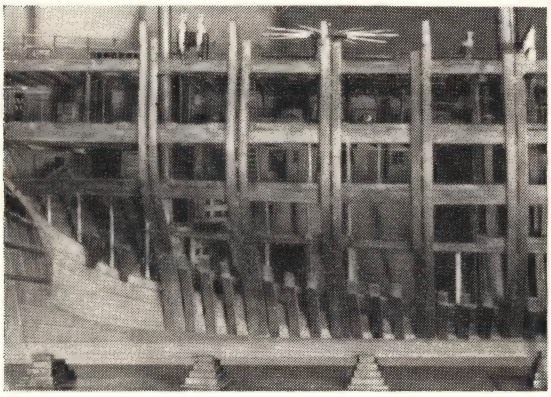
Open side of model showing construction of ship and interior fittings. Interior of frames with rail fixed to upper ends is shown underneath

first hand knowledge. One would reasonably class it as a dockyard model but for the presence of bone stanchions, carvings, double wheel, etc., which lend colour to the belief that it is a superior prisoner-of-war model. The timbers are all built up in the accepted fashion and all beams, stringers, knees, etc., are separate, and fit or dovetail into place, held only by shellac. There is another board with the remaining frames set up in position, giving a very good impression of the ship in an early stage of its construction, and showing the method of shoring up and alignment. Against the inside of the port side of the orlop deck aft, can be seen several separate cabins, each of these having a door, which, when open, reveals bunk boards. These are no doubt officer's quarters. The underside of the deck has hammock rails in position, and one rolled hammock is slung. The senior officers' quarters are on the after end of the main deck. There are two panelled partitions here, with doors, also sliding doors giving access to the quarter galleries and the officers' lavatory. Below the main deck can be seen the run of the steering cables and the tiller. These come below deck from the double wheel and are then carried through sheaves to the tiller. Under the quarter deck, there is a chain pump with cranked handles allowing a number of men to work it. The endless chain with scoops fitted, descends in a wooden trunk and there is a pipe to the side of the ship with a cock fitted. There is a double capstan with bars in place, on the upper deck and main deck. This can be removed, as the intermediate bearing is in two halves and is in the form of a double hatch, metalled around the bearing. There is a brass stove under the break of the forecastle, with fire irons, grid, stove pipe, etc., also taps from a hot water tank. The ship's bell is also here with lanyard attached.

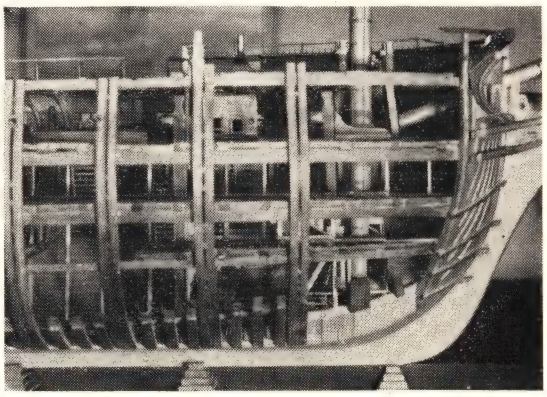
The magazine with its devious access and very necessary precautions is worth close examination. Descending from the main deck forward, there is a passage which leads to an air lock with doors each side. Then one can descend into the magazine in the bowels of the ship. The floor is leaded and there is ample room for the barrels of powder. No lantern could, of course, be used, and in the forward partition, there is a window, presumably glazed. Forward again is another partition a few feet away. In this, there is an oriel window where would be set a lantern giving the only light. Access to this is by climbing down a ladder from another hatch.

Owing to the serious damage sustained in the raid, the restoration of this model presented a number of problems. The damp of exposure resulting from the shattered case and roof, contributed largely to the

difficulty. A lot of debris, glass fragments, etc., were present and the model had to be handled very carefully to prevent more parts and fittings from becoming dislodged. Nearly half of the very numerous parts, though more or less in place, were insecure, as the damp had attacked the shellac after the shock had loosened them. After the clearing away of all unrelated parts and a partial clean up, all these needed



The starboard quarter



The starboard bow

careful removal and cementing in sections and fitting back securely. Hours were spent in contemplating the best method of approach. Frequently, the inaccessibility caused the biggest headache and special tools had to be devised. A very long pair of tweezers was needed, also spring jaws on a long rod were most useful for retrieving dropped pieces. A dental mirror was used, also a bent Perspex rod fitted on a small torch enabled light to be directed into awkward corners. Durofix was the principal adhesive used.

The age of the model, combined with the recent exposure, had also caused a slight warping of the whole structure. This had loosened some parts and forced others out of position, adding considerably to the difficulties. There were well over 100 loose beams, floors and carlings from $\frac{1}{2}$ to 2 in. long, with numerous knees, brackets and stanchions. These were carefully sorted as to purpose and then length. As the work progressed, they were gradually incorporated, but many more had to be made to replace the missing ones. Some were left over as their position or functions were unknown. The principle followed was that nothing should be put in position without positive knowledge of its " rightness," and nothing added which could possibly mislead or confuse future students. As the knees had been the first to fall out of place, it followed that many were lost. To remake some was a straightforward job, but a number had to be cut from the solid without a single straight edge from any viewpoint. Several were shaped to go round gun ports, and when the tumblehome of the side, the curvature of the deck and the presence of stringers had to be allowed for, it needed infinite patience and many rejections before they would fit neatly into place. When the fitting has to be done with very long tweezers, through an opening say 2 in. wide and about $1\frac{1}{2}$ in. high (between decks and timbers) to a position about 8 in. beyond, perseverance is somewhat necessary.

Only one door of four remained in the panelled partitions before mentioned. This also was panelled with different wood and had four openings for glazing in the upper half, and was about $1\frac{1}{4}$ in. high. Three of these, therefore, had to be made, and were fitted with minute sections of black silk as hinges.

After the interior work was complete, the broken and fractured ribs had to be replaced and repaired, cutting new from the solid. A number of ivory carvings on the trail board and stern were needed. The damp again had caused them to fall off and be lost. A few were in place and could be copied and fitted. Some of the former were visible on a pre-war photograph, so firstly, a careful sketch was made from this, using a powerful glass. The ivory top of an old piano key was then cut and fitted into the space. The drawing was then copied on to this. Then by means of engraving tools and needle files, the design was reproduced and finally cemented into place. Several $\frac{3}{4}$ in. ivory stanchions were needed for a rail at the break of the quarter deck. These were partly turned and partly square and had brass sheaves of $\frac{1}{16}$ in. diameter let into them, and had, of course, to match existing ones. Here, an old bone knitting needle came in useful.

Concerning the armament, luckily a few guns and carronades remained as patterns. New brass weapons were turned to match, aged chemically, and lacquered. The ageing was done by immersing the guns in acetic acid and then suspending them in the fumes of ammonia. New carriages were then constructed of box wood and fitted with minute blocks. Many other details needed attention but finally it was completed and now stands again on view to the public.

AUTOMATIC STEERING GEARS

by R. H. WARRING

BROADLY speaking there are three different forms of automatic steering gear used for model racing yachts. Of these, in this country at least, the Braine gear is probably the best known and most popular. The principle of the Braine gear is simple—Fig. 1. A quadrant is mounted on top of the rudder spindle and lines from the mainsail boom terminate on this quadrant. Thus the pull on these lines can be translated, through the quadrant, into a corresponding rudder movement which can be used to control the direction of the yacht. If, for example, a sudden gust of wind strikes the mainsail, tending to bring the yacht round head to wind, this increase in sail force will also give a stronger pull on the appropriate line running to the quadrant and pull the rudder round to compensate.

Ordinarily, however, the Braine gear—or any other form of steering gear, for that matter—is used for the main purpose of keeping a straight course in a steady wind so that the sails continue to maintain their pre-set attitude (or " angle of attack ") relative to the wind. Assuming that the setting of the sails is initially correct, the yacht is then operating most efficiently. The automatic steering must be adjusted according to the wind strength and also the direction in which the yacht is to be sailed relative to the wind. It becomes obvious, therefore, that any such steering gear must be adjustable for use under all conditions.

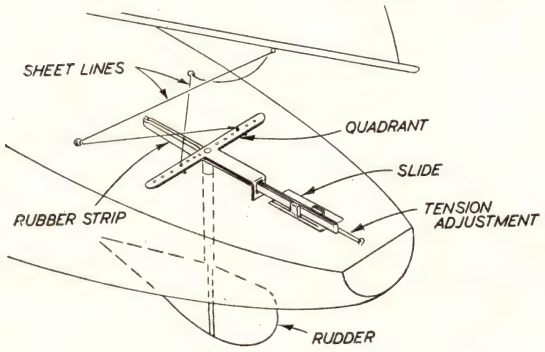


Fig. 1

On the Braine gear in its simplest form there are two basic adjustments. First there is the position of the running lines on the quadrant. The nearer these are located to the centre of rudder axis the greater the effect for any given sail pressure. Hence, to provide adjustment the quadrant arm is drilled with a number of holes and the lines can be located in any one of these corresponding to a range of adjustment from " fine " to " coarse."

The second adjustment consists of a form of " return spring " on the quadrant itself. If freely pivoted, any pull on the quadrant would simply turn the rudder over to its maximum travel. The quadrant must, therefore, be fitted with a " self return " spring so that normally it will stay central with no pull on the lines. To produce rudder movement any pull on the lines must then first over-ride this " self-centring " spring.

Again in its elementary form this " return spring " consists simply of a length of rubber strip, the tension

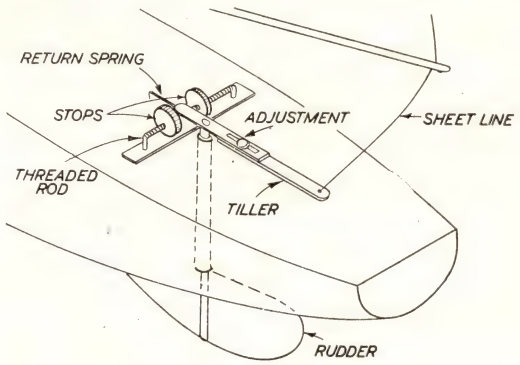


Fig. 2.

of which may be adjusted to vary the amount of resistance to displacement according to the various conditions. This, together with the quadrant adjustment, gives a wide range of sensitivity, more than sufficient to cover all needs.

In practice, however, the system may be more elaborate with further adjustment stops on the central rubber so that sensitivity is different on different courses without any further manual adjustment of the gear when turning the boat round. Other lines may also be added. For example, the jib may also be connected to the rudder quadrant for further control under certain conditions, also the spinnaker when used for running with the wind. Again, too, the Braine gear can be coupled up to serve as a " gye " with rudder action set to assist the boat to turn on to another tacking course and then take up a normal " beating " trim on this new course. The success of variations of this type, however, is largely a matter of experience and careful adjustment. The beginner, or even the average model yachtsman, is likely to get into trouble using Braine gear other than in its simplest form for normal straight-course steering. First he must thoroughly master the very considerable number of possible variations in setting with just quadrant " power " and " tension " or " return spring " power.

More recently there has appeared a refinement of

the original Braine gear, known usually as the "Marblehead" gear which dispenses with the quadrant as such and steers directly by the pull of the sheet line on a tiller—Fig. 2. A simple screw device permits adjustment of rudder travel and, of course, some form of adjustable spring tension is still necessary to oppose the pull of the sail. Notice, too, in this case there is only one line from the boom directly on to the tiller arm. The system does not

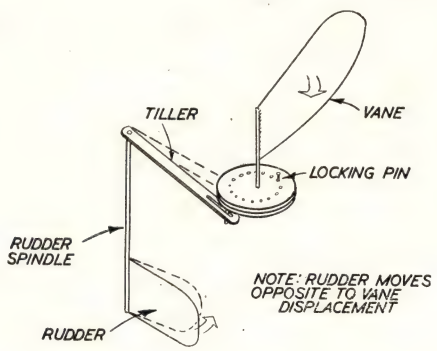


Fig. 3.

lend itself so readily to the more complicated hook-ups possible with the Braine gear which, to the tyro, is possibly an advantage. But at the same time it is apt to be more critical, and correct adjustment and use only comes after a reasonable amount of practice and experience.

Both these automatic steering gears have one thing in common. Rudder power, as given by rudder offset, is proportional to the wind strength. To be mathematically correct the rudder power will vary as the wind velocity squared since the aerodynamic force generated by any lifting surface—and the sail is an aerofoil in action—varies as the square of the speed of airflow and so a local doubling of the wind strength would produce roughly four times the pull on the quadrant through the sheet line. Such gears, therefore, could logically be expected to be reasonably satisfactory in gusty weather, although there is the obvious possibility of over-steering under such conditions.

The third type of steering gear commonly used works on a somewhat different principle. This is the vane gear, which is designed to maintain a predetermined course by aligning the rudder with respect to the *wind direction*, not wind *strength*. Here the rudder action is quite independent of the position of or pull on the sails.

As for mechanism for the model racing yacht the vane gear has been the subject of much controversy. In some countries it has been bitterly attacked, and even banned. Opposition to it was considerable in this country for many years and it was not until the 1948 season that its use was fully sanctioned for racing events. In America and Scandinavia, on the other hand, the vane gear has practically ousted the other forms of automatic steering gear.

Vane steering gear, as such, is not the modern invention so many people seem to imagine. The first recorded instance of a vane coupled to the rudder being used as a form of automatic steering device dates back to 1875. Masthead vanes were experimented with in this country during the early 1920's, but seem to have presented insurmountable difficulties and were never perfectly reliable, and the first conception of the modern vane appears to originate from a Swede, Iversen, who patented such a system in 1931. A vane, mounted on an extension of the rudder spindle was indirectly coupled to the latter by means of a pin locking two discs—Fig. 3. These discs were perforated with a number of holes so that the vane could be set at any desired angle relative to the rudder.

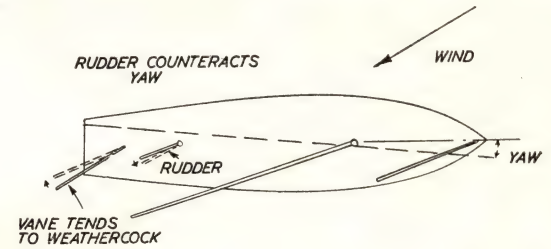
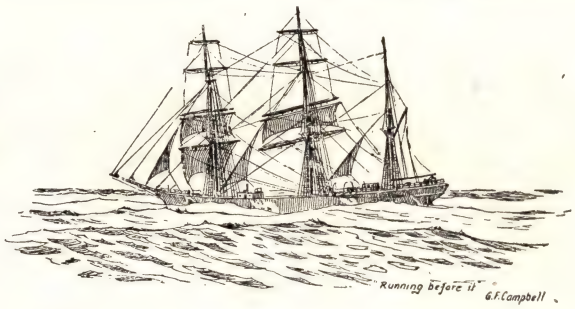


Fig. 4.

The principle of action of the vane is then fairly obvious. Offset about its own pivot point the vane will tend, naturally, to trail downwind. By means of the adjustment it is possible, therefore, to set the vane relative to the axis of the vessel—and the rudder—so that whilst the boat is heading along its true course the vane is trailing downwind and the rudder remains central (or offset a pre-determined amount, as required, for control). If, now, the boat heads or veers off course the vane will still continue to try to trail downwind and will now assume a different attitude relative to the axis of the vessel. Being coupled to the vane the rudder will also move a corresponding amount in the opposite direction giving a compensating rudder force tending to return the yacht to its original path once more. The greater the yaw angle of the boat the greater the rudder offset and of the returning action—Fig. 4.

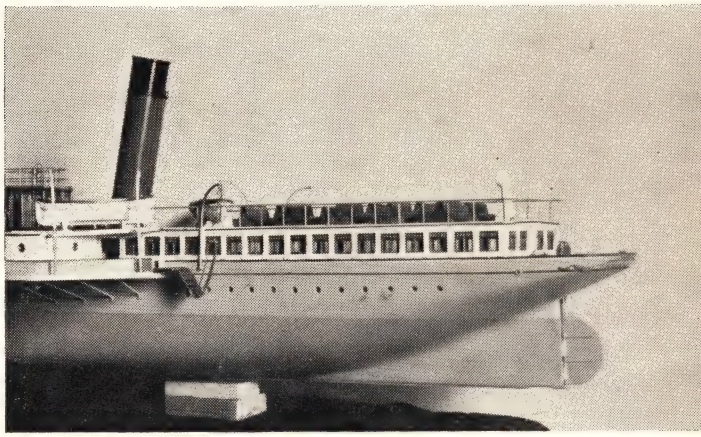
To be continued



*P.S. *GLENSANNOX*

A ¼-in. Scale Working Model

by A. S. Miller



THE two landing platforms at the aft sponson are made up of brass sheet and cedar wood, as detailed on the drawing (Fig. 23). They should normally be carried folded up against the saloon sides, but it adds realism if they can be lowered. The exact location of the hinge pins on the hull is better marked from the two lugs on the metal frame. These lugs should be carefully made, so that the platform is level when in the lowered position.

The hinged curved supporting arm should move easily in the slot on the underside and some play here is permissible. A bridle carries the short ladder by two light chains, and the whole is suspended from the small davit which is carried by two brackets, one fixed to the saloon side and the lower one on the hull itself (see Fig. 24).

The promenade deck is as light as possible, preferably of ⅛-in. yellow pine, cambered to $\frac{1}{16}$ in. at the edge. Thin millimetre plywood may be used if preferred, with stretchers pinned to the underside at intervals. The whole deck is divided into sections, but it is only necessary to make the centre midships section to lift out. This is the section which carries the two funnels and deck house, and it has to be removed for placing the accumulators in position.

The eight funnel guys, which are secured to the deck or paddle box, should be made to hook into the eyes in the lower band of each funnel, as already mentioned. When removing the deck, these guys must be unhooked from the funnel. When in place, the centre section rests on four light aluminium beams, which stretch across the vessel from the saloon sides, and it must be carefully fitted at the edges where it meets the fixed portions. There is really no need for it to be watertight, because no water should reach anywhere near the deck. The four manhole covers over the coal chutes are sufficient fixing. The whole deck should be ruled with thin parallel lines, just under ⅛ in. apart and then varnished. The normal width of each plank was 5 in., so a bare ⅛ in. will be sufficiently near to scale.

*Continued from June issue, p. 76.

Disposed on both the after and fore-deck, the seats are fixed in the position shown on the general plan. The construction of these does not follow the prototype exactly. In this each seat was supported by eight turned wood legs and a buoyancy tank, but a simplified form built up from cigar box wood is suggested. The narrow slats, which form the seat, are cut from long lengths of mahogany strip, a full 3/32 in. wide × 1/32 in. thick. The length of each seat is the equivalent of 9 ft. 3 in., i.e., 2⅜ in., and the narrow strips should be multiples of this before cutting. Another method is to prepare a number of pieces of 2⅜ in. long and 1/32 in. thick × ¾ in. wide. Cut this lengthways by a razor blade into a series of strips 3/32 in. wide and lay them on to the ends, and fix by Durofix. They are too fragile to fix by pinning, unless the pins are extremely minute. Each seat is secured to the deck by ⅜ in. × No. 1 wood screws (preferably brass) screwed from underneath.

All the ventilators (Fig. 25) of which there are 12 in number, are made by deposition of copper on a lead casting, as described very fully in *The Model Engineer* for May 24th, 1945. This method produces a perfect ventilator at little expense.

The drawing on page 30 of the April issue shows only eight of the twelve ventilators. The remaining four should be placed on the same fore and aft centre line as those on the plan view.

One pair are 3½ in. behind the two at the side of the aft companion way and the other pair 5¼ in. behind those in front of the forward funnel. (See also photograph of ship on page 10 of March issue).

The bollards and fairleads are built up in brass to the sizes given, and are a plain simple job. The forward capstan is turned from brass rod as indicated on the detail drawing (Fig. 26). The anchor davit is bent up from ⅛-in. brass rod and is very similar to the boat davits aft of the paddle boxes. While on the matter of davits, the *Glensannox* carried on the forward sponson, both port and starboard, a large davit with falls, which was added some time after her launch. This was used for hoisting cargo at ports of call where there were no piers. Eventually,

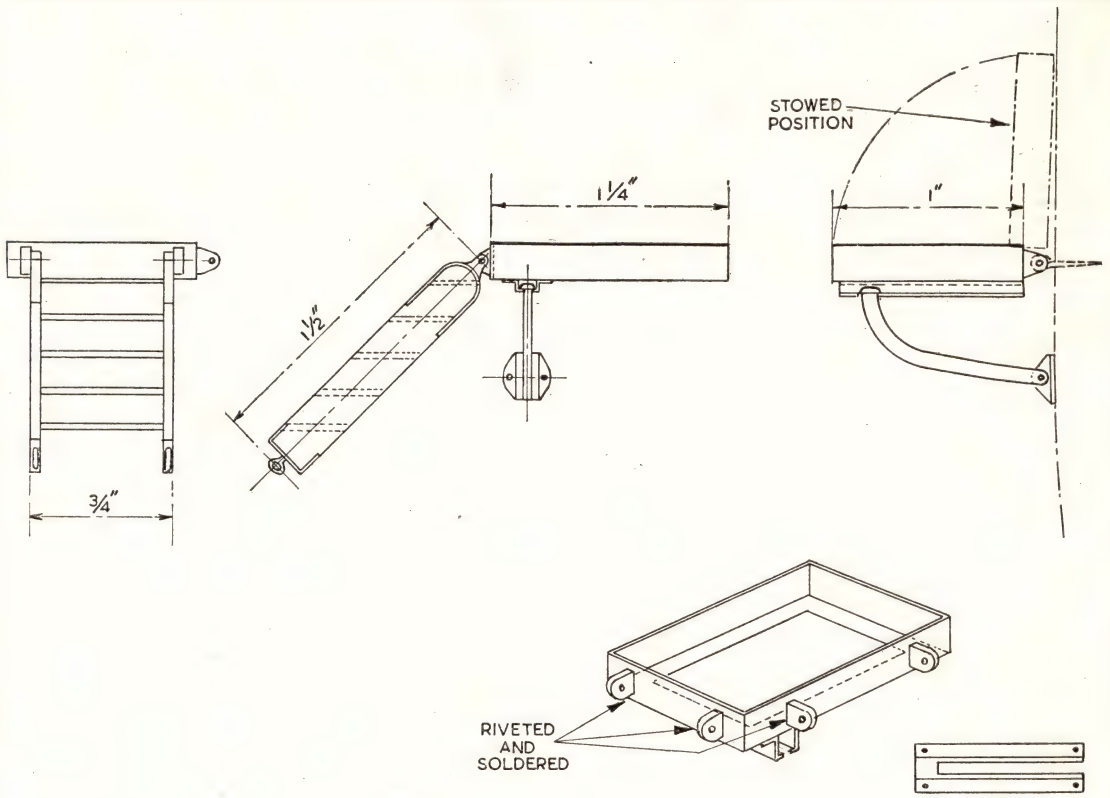


Fig. 23.

Landing platform details.

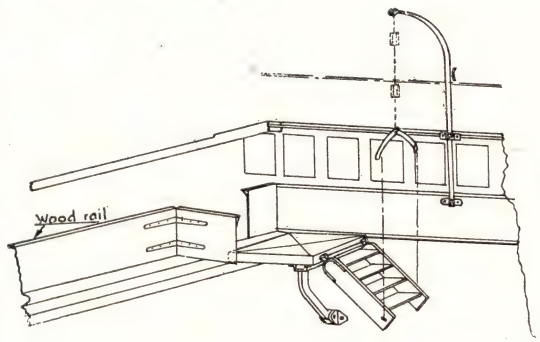
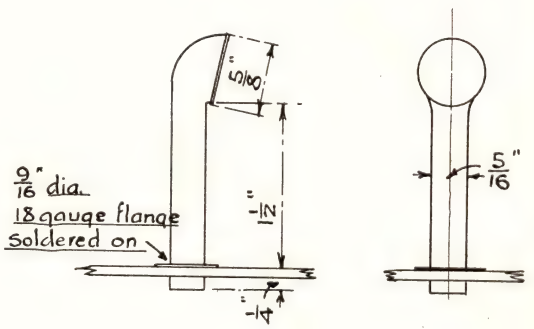
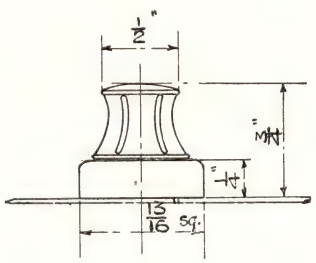


Fig. 24.



VENTILATOR

Fig. 25.



FORD CAPSTAN

Fig. 26.

it was not required, and it need not be fixed on the model, and is probably better omitted, because it may interfere with the lifting of the deck. The port and starboard lights were fixed at handrail height, just forward of the paddle box. At each gangway, light wood gratings should be built up and pinned to the deck. These are built up of cedar wood strips cut to specified lengths and assembled to form a grating 3 ft. 6 in. or to scale $\frac{7}{8}$ in. square. Eight in all are required, i.e., two at each landing opening and the method of construction which is relatively simple is given herewith and shown on the drawing, Fig. 27.

A piece of cedar 2 in. long × 1 in. wide × $\frac{1}{16}$ in. in. strips cut to $\frac{7}{8}$ in. long and press one into each of the first and tenth groove and secure by Durofix. Let the ends project slightly (Sketch *B*).

In a similar manner fix another strip at the ends of the two crosspieces taking care to keep the two slotted strips parallel and square with the cross-bars. With a frame built up as (Sketch *C*) the remaining strips should be pressed into place and all Durofixed as before. The most satisfactory method of fixing is to place the whole assembly between two pieces of metal or plywood held in the vice-jaws. Be careful not to exert too much pressure and the top surface will be quite flat with a number of square holes at regular intervals all over.

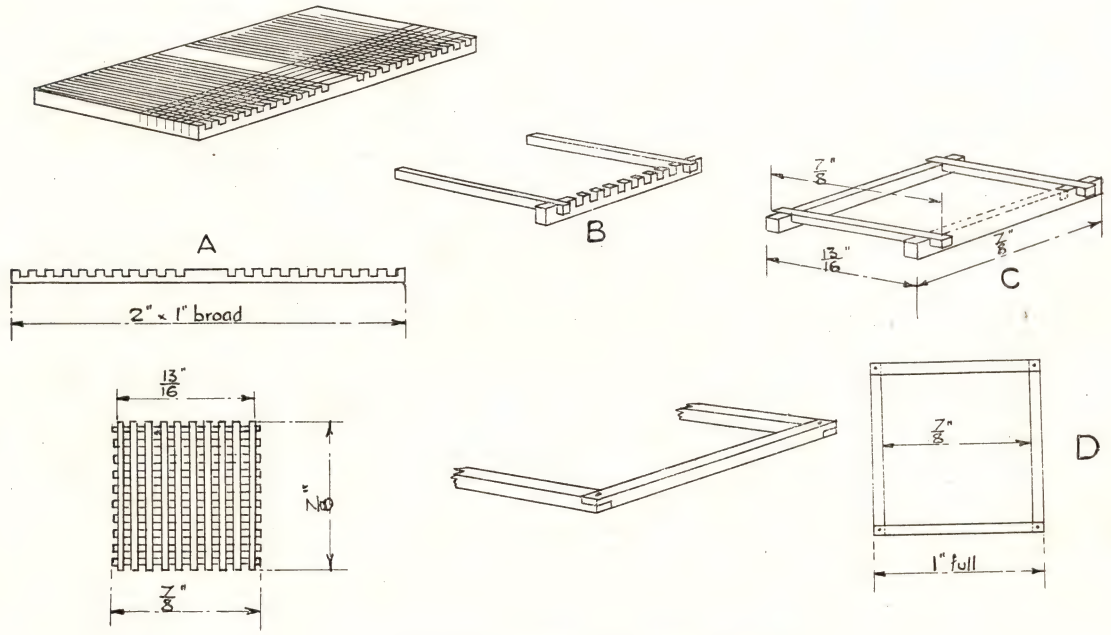


Fig. 27. Method of making gratings

thick is cut across the grain by 20 grooves, a bare 1/32 in. deep. Cut the first groove about 3/32 in. from each end and space them 10 in a length of $\frac{13}{16}$ in. This should be done by a thin ward file or fine fret saw. These grooves should be approximately 1/24 in. wide, but this will depend on the thickness of the file. Now a number of narrow strips 1/24 in. wide × 1/32 in. deep or thick should be prepared by cutting a 2 in. length of 1/32 in. thick wood into lengths 1/24 in. wide.

To obtain clean cuts a sharp razor blade, held in one of the holders which can be obtained from most hardware stores or Woolworths, makes an ideal cutter.

To assemble the grating the first mentioned piece with the cross-cuts should be cut lengthways into strips $\frac{1}{16}$ in. wide. You will then have a number of strips like this (Sketch *A*) each with 20 grooves at regular intervals. Take two of the 1/24 in. × 1/32

To form the outer frame, four strips of wood $\frac{1}{16}$ in. square are required $\frac{7}{8}$ in. long. These should be half checked at each corner and pinned and Durofixed to make a square $\frac{7}{8}$ in. inside × 1 in. or slightly more outside (*D*). The grating already made should be pressed by the thumb into this frame and a spot of Durofix on the underside will secure it.

If carefully made and set out accurately this forms a good representation of the type of grating generally used on the average paddle steamer.

They should be secured to the deck at the correct positions by " Lills " pins.

One word of warning—when cutting the pieces with the cross-grooves into lengths care must be taken not to break off the small piece between each groove. It is better to use the razor blade, making a very shallow cut at first and going over this frequently, using the least possible pressure, until the strip is formed.

Mr. Honey adding finishing touches to the model

Two Notable Ship Models

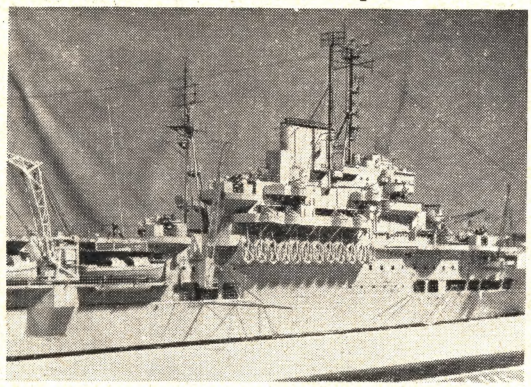
OUR readers who are in London during the Festival should take the opportunity of visiting the museum of the Royal United Service Institution in Whitehall. Here, in addition to the normal museum collection, which contains many interesting ship models, may be seen a special show arranged in the lecture room of the Institution which includes amongst other interesting items, two ship models on exhibition for the first time, one of H.M.S. *Victory* and the other of the modern aircraft carrier *Illustrious*.

The *Victory* is to a scale of $\frac{3}{16}$ in. to the foot, and represents the ship as she appeared after her extensive refit in 1804 and before the Battle of Trafalgar in 1805. The model was commenced by Mr. W. B. Cook, of Portsmouth, but was incomplete at the time of his death, a considerable amount of the rigging having still to be done. It was acquired by the museum in September last year and in view of the exceptional quality of the model, arrangements were made for it to be completed in time for the opening of the Festival. Much of the rigging was not up to the standard of the rest of the model. Possibly it had been made by Mr. Cook when he was failing in health before his death, or it may have been added by someone else in an attempt to finish the model.

The model was handed over to Mr. William Honey, who is well known in London ship modelling circles, and he decided that the rigging should be stripped down, and minor repairs and additions made to the hull, which also needed cleaning. The ship would then need to be completely re-rigged including all the rope-work of the sails. This task has just been completed, even down to the running gear on the stun'sls on the foremast.

Mr. Honey is to be congratulated on the amount of work which he was able to accomplish in the short period of six months. In order to do this a careful time schedule was made, and only by adhering to this very strictly was he able to finish his task. Criticisms,

of course, could be made but any faults there may be are sins of omission due to the time factor, notably the omission of the binnacle on the quarter-deck and a certain amount of servicing on the standing rigging. It is to be hoped that the museum authorities will, at some future date, be able to arrange for a more extensive refit, after which it is safe to forecast that the model would take its rightful place as one of the finest representations of the *Victory* in existence. It will readily be observed by the visitor that the inside of the hull down to the level of the lower gun deck is complete in every detail, with its standards and beams, guns, cables, messengers, etc., even to the extent of the numbers of the messes which are painted on the sides of the ship between the guns.



Mr. Norman Ough's model of H.M.S. "Illustrious."

The model of the aircraft carrier *Illustrious* has been built for the Institution by Mr. Norman Ough, who has made many models for this and other museums, the scale being $\frac{1}{16}$ in. = 1 ft., and as practically every detail is represented much of the work is comparable to the finest examples of miniature modelling. Our photograph will give some idea of the wealth of detail included in this model.

FOR THE BOOKSHELF

SCALE MODEL SHIPS THEIR ENGINES AND CONSTRUCTION

By Bernard Reeve and P. W. Thomas. Published by Sidgwick and Jackson. Price 20s. net.

As stated on the jacket this is a book for the beginner and the amateur and as such will be a valuable addition to the number of books available on this subject. It provides a very comprehensive survey of the subject, covering practically every phase of the building of model steamers and power boats. Racing hydroplanes are, of course, a different subject, and these are not dealt with. The first part of the book discusses the ship generally, pointing out the suitability or otherwise of the various types as prototypes for working models. Different methods of hull construction are briefly described, including the laminated and the rib and plank systems in wood, and also a metal hull in strakes on wooden moulds. The chapter on hull design is interesting, but we think that more space is necessary to explain clearly the mysteries of metacentric height. It is rather misleading to say that "the C of G (centre of gravity) meets the C of B (centre of buoyancy) at a new point known as the metacentre." Admittedly, the authors go on to explain the desirability of having the metacentre above the C of G. Furthermore, in the diagram (Fig. 27) if the centre line of the ship had been shown in the drawing of the heeled position it would have been made clear that both the metacentre and the C of G were always on the centre line whereas the C of B was not. Also in both drawings the centre of buoyancy should have been shown on the centre of gravity of the submerged portion. It is very desirable that the model maker should have these things explained to him, but the explanation should be clear and accurate. Apart from this, which after all will not worry the majority of readers, the book is very clear and practical, and there is plenty of evidence that the authors have built the models they describe and that the methods they recommend are based on practical experience. The jig for proving the hull lines (Fig. 29) is new to the writer and is a very easy and practical way of doing the job. A large number of ship's fittings are illustrated and useful suggestions for representing them in model form are made.

Section II deals with the power plant and includes instructions for making electric motors and steam engines of various types, both oscillating cylinder and slide valve. The authors assume the builder has only the simplest of equipment, and the instructions given will encourage the most timid of beginners to make the attempt. The boiler and lamp is also dealt with and there is a short chapter on the principles of flash steam, and one on petrol and compression ignition engines. The final chapter is on propellers and the book concludes with appendices showing where good ship models may be seen, where materials may be obtained, and a list of ship's plans available from the publishers. The illustrations are plentiful and clear, and with its 284 pages and cloth boards the book is good value as a general introduction to this fascinating hobby.

News from the Clubs

MODEL YACHTING ASSOCIATION

The " M " Class Championship Races were held at Dovercourt this year on May 12th, 13th and 14th, Whitsun weekend. There was a record entry of 34 boats all of whom duly arrived with the exception of Mr. O. G. Orfeur, of Southgate, who was prevented by illness in the family. There was a fresh N. to NE. breeze during the three days and full suits were used throughout. There were some very interesting boats and there is plenty of evidence to show that the " M " rule gives a lot of scope to the designer. Vane gears were fitted to most of the boats, but there were quite a number—including Mr. A. W. Littlejohn's *Kittiwake* II which had the Braine. Mr. Redhead's boat *Babbie* (M.Y.S.A.), a sharpie with a steep rise of floor, was an interesting departure and finished in the second place. The final results were :—

1st. R. W. Wareham with *Doris H* (London M.Y.C.), 40 pts.
2nd. R. Redhead with *Babbie* (M.Y.S.A.), 38 pts.
3rd. F. Fitzjohn with *Anemone* (Danson), 31 pts.
4th. A. W. Littlejohn with *Kittiwake* II (M.Y.S.A.), 29½ pts.

J. Edwards, of Birkenhead, tied with Mr. Littlejohn for fourth place, but in the re-sail Mr. Littlejohn won. The Mayor and Mayoress attended the dinner held on Saturday evening, at which over 100 persons were present including skippers with guests and friends.

SCOTTISH MODEL YACHT ASSOCIATION

The annual races for the " Marblehead " Class Championship were held on Saturday, May 19th, at Alexander Park, Glasgow. Ten clubs competed in a fresh breeze and second or third suits were the order of the day. The results were as follows :—

1st. W. Bowman, with *Marietta* (Dennistoun Club), 35 pts.
2nd. D. Leggatt, with *Lady Jean* (Scottish " A " Class Club), 32 pts.
3rd. H. Spencer, with *Britannia* (Victoria Club), 30 pts.

In the fifth heat a most unusual incident occurred when the Scottish Commodore's boat, *Lady Jean*, sank by the stern, when she was two-thirds of the pond ahead of her opponent when going to windward. But for this occurrence, this boat would have tied for first place.

The " M " class is beginning to find favour in Scotland owing to the freedom of design which the rule affords.

Y. M. 6m. O. A.

The open race for the Glenham Cup held a few weeks ago on the Rick Pond, Hampton Court, saw some very keen sailing and had a most exciting finish. There were 14 entries, but two of the best boats (W. J. Daniel's *Esther*, the present British champion, and Guy Blogg's *Sharma*) had to withdraw at the last moment.

The weather was cold and the wind variable and at the end of the last heat a number of vital re-sails had to be made, as there was a triple tie for the cup involving three of the four clubs competing, viz., Y.M.6m., Eastbourne and Gosport, all having scored 40 out of a possible 50 points. The final results were :—

1st. *Barika* (M.Y.6m. O.A.).
2nd. *Barkis* (Eastbourne).
3rd. *Spotlight* (Gosport).

Barika is an extremely good boat, one of Admiral Turner's designs, and has won the only three cup races she has entered. It is noteworthy that her skipper was the only one to use the Braine steering gear, not a vane.

The fixtures for July are as follows :—

July 1st. 11.30 a.m. Jubilee Cup (open).
July 8th. 2 p.m. Surbiton Shield V.
July 15th. 2 p.m. Handicap race.
July 22nd. 2 p.m. 36-R class race.
July 29th. 2 p.m. Club race.
Sailing water : The Rick Pond.
Hon. Racing Secretary : MAJOR G. B. LEE, 72, Westfield Road, Surbiton, Surrey.

BOURNVILLE M.Y. & P.B.C.

The Festival year regatta opened on Whit. Saturday, May 12th, with a contest for the Bournville Shield. Yachts of the 6 m. class were engaged and the racing was very keen, the leading results being :—

1st. *Dare*, A. Davis, 18 pts.
2nd. *Iris*, D. Smedley, 16 pts.
3rd. *Heather*, M. Fairbrother, 14 pts.

In the Walter Edwards Shield competition, which followed 36 R. class yachts raced with mixed fortunes until D. Smedley emerged as the victor with George Leeds as runner-up.

Monday was devoted to the power boats. The events were opened in the morning by Sir Robert Bird who was accompanied by Lady Bird. Over 70 boats from many parts of the country competed.

In the steering competition the winner was C. Williams and the runner-up P. Wakeman, both of the home club.

The results in the speed events were as follows :—

10-*c.c. with Commercial Engines*
1st. A. Pratt (Bournville), *Dopey*, 36.2 m.p.h.
2nd. P. Wakeman (Bournville), *Blue Blazes*, 33 m.p.h.
3rd. H. Wraith (Altrincham), *Mrs. Frequently*, 22.9 m.p.h.

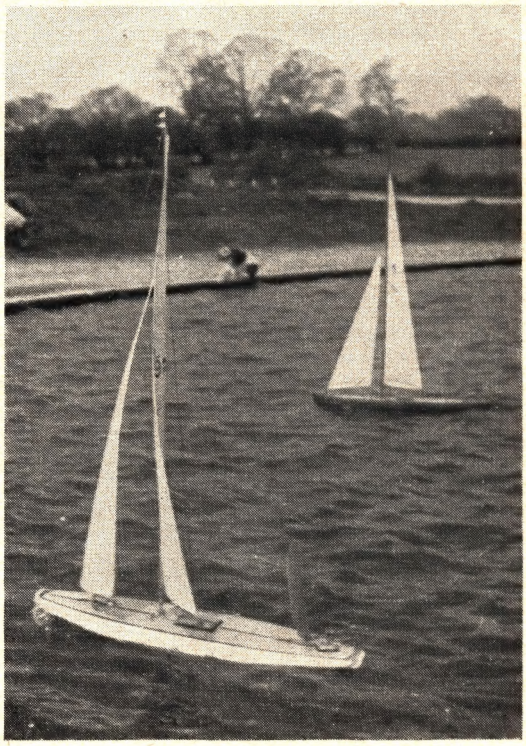
10-*c.c. with Home-made Engines*
1st. W. Innes (Altrincham), *Jo Mac*, 46.6 m.p.h.
2nd. C. Phillips (S. London), *Foz* 2, 46.4 m.p.h.
3rd. R. Mitchell (Runcorn), *Lamma*, 42.1 m.p.h.

15-*c.c. for the D. W. Collier Speed Trophy*
1st. R. Mitchell (Runcorn), *Beta II*, 44.1 m.p.h.
2nd. G. Lines (Orpington), *Sparky*, 44.0 m.p.h.
3rd. W. Churcher (Coventry), *Annette II*, 36.4 m.p.h.

The first event for " A " class hydroplanes for the Coronation Speed Trophy. Results :—

1st. A. Cockman (Victoria) *Ifit VII*, 52.3 m.p.h.
2nd. S. Innocent (Victoria), *Betty*, 45.1 m.p.h.
3rd. K. Williams (Bournville), *Faro*, 40.7 m.p.h.

Photographs of this regatta will be found in E. T. Westbury's " M.P.B. Topics " in this issue.



A close finish in the finals at Dovercourt

BIRMINGHAM MODEL YACHT CLUB

The 36 in. restricted open event, " The Lawrence Bowl," was held by the Birmingham Model Yacht Club at Witton Lakes, on Saturday, May 5th. The race attracted 11 entries, including boats from Coventry M.Y.C. and Bournville M.Y. & P.B.C.

Competition was exceptionally keen and many close heats to windward were sailed.

Results were :—1st, *Gremlin*, D. Lippett, Birmingham M.Y.C., 2nd, *Chance*, G. Leeds, Bournville M.Y. & P.B.C. ; 3rd, *Maretta*; W. Smith, Coventry M.Y.C.

HOVE AND BRIGHTON M.Y. CLUB

The fixtures for July are as follows :—

July 1st. 10 Rater (3rd) Club Championship.
July 8th. " M " class handicaps.
July 15th. " M " class (3rd) club championship.
July 22nd. 10 rater handicaps.
July 29th. Rally of sailing ship models organised by Thames Ship Model Society.

Hon. Secretary : F. C. TANSLEY, " Breydon," 12, Rigden Road, Hove, 4, Sussex.

THAMESSIDE AND MEDWAY VALLEY RADIO CONTROLLED MODELS ASSOCIATION

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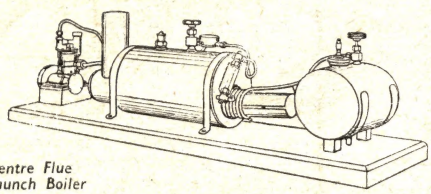

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